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TO: Mrs. Virginia M. Bolton, Contract Administrator
Office of Space Sciences, Bioscience Program, NASA

DATE: 24 February 1964 *1 p 0 refer*

FROM: Joe W. Tyson, The George Washington University, Biological Sciences
Communication Project (BSCP) *Washington D.C.*

SUBJECT: Interim report, NsG-485) for the period 5/20/63 to February 15, 1964.

During these first nine months of the subject grant, much time has been occupied with the collection, categorization, and appraisal of documentary materials of presumed and known interest to the space biosciences program of NASA. In only a few cases have the entire documents been retained after bibliographic data has been obtained and the results subjected to that handling required by the several systems under consideration.

Activities to date may be described as follows:

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- 1) By carefully evaluating 1000 recent scientific papers in fields identified as of interest, approximately 70 keywords or descriptors have been derived. Up to five of these descriptors are assigned each paper (or scientist) for indexing purposes. Further, it is by the use of such descriptors (based on a larger sample of the literature) that sub-disciplines may be properly defined as "space biology".
 - 2) A preliminary directory of life scientists now engaged in research activity pertinent to space biology is nearing completion. It will appear in two sections. Section I will be an alphabetical list of names, addresses, and descriptors of interest. Section II is a rotated descriptor index. It is expected that this second section will immediately suggest areas of intensive concentration, and, at the same time, will suggest other areas requiring further research activity.
 - 3) A preliminary directory of organizations and laboratories either engaged in research or supporting research is being compiled and will be printed subsequent to the personnel directory.
 - 4) Three specialized bibliographies are in preparation. In order of probable printing, they are:
 - a) Plants and plant organelles in gravitational fields, primarily less than 1 G.
 - b) Circadian rhythms, biorhythms - an extension of the most excellent bibliography prepared by J. Aschoff and Colin S. Pittendrigh (BIBLIOGRAPHY OF CIRCADIAN RHYTHMS) prepared under the auspices of the Office of Naval Research (no date).
 - c) Exobiology - including some spacecraft sterilization.
 - 5) In response to a request from the Office of Life Sciences, an Abbreviated Bibliography of papers of interest to the Space Biosciences (1960-63) was prepared in draft form and submitted 7 November 1963. A copy of this is herewith included.

UNPUBLISHED PRELIMINARY DATA

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- 6) The identification of primary journals germane to the general topic progresses. The completion date for this catalog cannot be estimated at this time.
- 7) Sufficient primary literature has now been identified and located to begin the survey of indexing and abstracting facilities in the space biosciences. It is our plan to investigate three major parameters:
 - a) Extent of coverage - what percentage of the primary paper literature ultimately appears in the secondary sources?
 - b) Timelag between original publication and appearance of an abstract or author summary.
 - c) Availability of abstracts and index entries.
- 8) An underlying study of the feasibility of certain information retrieval techniques applied to the literature here considered has accompanied all of the BSCP activities to date.
- 9) Attention has been given the need for a new journal in the space biosciences. It is the considered opinion of the BSCP that a definite and pronounced need exists for a rapid reporting medium for both positive and negative results of research activities. It is felt that a regular reporting type publication will meet this need for at least the next two years. The BSCP has already embarked on the regular publication of such a public document.
- 10) It is suggested that two topics are sufficiently advanced to warrant an international symposium. They are EXO BIOLOGY and SYNERGISTIC EFFECTS IN THE SPACE ENVIRONMENT. The BSCP is anxious to discuss these topics further with the appropriate NASA personnel.
- 11) A separate report concerning the necessity for critical reviews is in preparation. To briefly summarize, it is felt that critical reviews are now pertinent in the general areas of biological coding, spacecraft sterilization, and circadian rhythms. Individuals can be identified of whom such reviews should be solicited.
- 12) Animals largely excluding man, in gravitational fields has been added to the bibliography previously named in (4-a).
- 13) The BSCP has responded to a number of specific requests for information or communication services from either the Office of Space Sciences or the scientific community, and is anxious to continue this practice.

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